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Lifetime Cancer Risk in the British Rubber Industry:

A retrospective cohort with 49 year follow-up

Mira Hidajat¹, Damien McElvenny², Will Mueller², Peter Ritchie², John W Cherrie^{2,3}, Andrew Darnton⁴, Raymond Agius⁵, Frank de Vocht¹

¹University of Bristol, Bristol, ²Institute of Occupational Medicine, Edinburgh, ³Heriot Watt University, Edinburgh, ⁴Health and Safety Executive, Bootle, ⁵University of Manchester, Manchester

IARC concluded (IARC, 1982, 1987) there is sufficient evidence of a causal association between occupational exposures in the rubber-manufacturing industry and cancer. However, because of the complexity and variety of substances used in the process, a great deal of uncertainty regarding which specific exposures give rise to the increases in cancer remains. Moreover, since exposures in the rubber industry have decreased considerably and efforts have been made to remove confirmed carcinogens from the production process, it is unclear if increased cancer risks are (primarily) attributable to historical exposures.

To quantitatively evaluate exposure-response associations between specific long-term occupational exposure and cancer mortality, we updated a cohort of 40,867 men aged 35+ who were employed in the British rubber industry in 1967. A previous follow-up to 1976 identified excess risk of bladder cancer in men, excess death from lung cancer across the industry and excess stomach cancer mortality in the tyre sector.

Extending the mortality follow-up to 49 years, we are currently processing mortality data from NHS Digital and linking it to a population-specific quantitative job-exposure matrix for rubber (process) dust, rubber fumes, and n-Nitrosamines based on available data from the EU-EXASRUB project. We hope to begin exposure-response analyses in April 2017 (and present the results at the conference). Few occupational cohorts of this size have such lengthy follow-up, so the presented analyses will provide an important overview of lifetime exposure-specific cancer mortality risks of specific exposures historically and currently encountered in the industry.